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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,404	03/25/2004	Rie Sato	07906.0021	5120
22852	7590	06/15/2005	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			AUDUONG, GENE NGHIA	
			ART UNIT	PAPER NUMBER
			2827	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/808,404

Applicant(s)

SATO ET AL.

Examiner

Gene N. Auduong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03-25-2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on March 25, 2004 is being considered by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Hannah et al. (U.S. Pat. No. 6,741,496).

Regarding claim 1, Hannah et al. disclose a magnetic memory comprising: a spin polarization unit configured to spin-polarize electrons constituting a write current (col. 4, lines 35+); a hot electron generation unit configured to convert the electrons into hot electrons

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(injecting high energy electron through an energy gap; col. 4, lines 41+); and a magnetic layer magnetization of which is reversed by the hot electrons (col. 4, lines 48+; col. 12, lines 3+).

Regarding claim 2, Hannah et al. disclose the magnetic memory according to claim 1, wherein a response characteristic of an electric current flowing as a result of application of a voltage to the hot electron generation unit is non-linear (col. 8, lines 1+).

Regarding claim 3, Hannah et al. disclose the magnetic memory according to claim 1, wherein the hot electron generation unit includes an insulation film (energy gap) which enables the write current to tunnel through the insulation film in a thicknesswise direction thereof upon application of a voltage (col. 4, lines 41+).

Regarding claims 4-5, Hannah et al. disclose the magnetic memory according to claim 1, wherein the hot electron generation unit includes two conductive layers and an insulation film formed between the two conductive layers; and the insulation film includes a conductive area; wherein the hot electron generation unit includes a Schottky junction (figures 8, 10; col. 3, lines 1+).

Regarding claim 6, Hannah et al. disclose the magnetic memory according to claims 1, further comprising: a magnetic layer in which a first crystal axis is aligned in a direction perpendicular to a film surface; and a non-magnetic layer which is stacked on the magnetic layer and in which a second crystal axis is aligned in the direction perpendicular to the film surface, wherein one of a symmetry of an up-spin band and a symmetry of a down-spin band, which is achieved at an energy level higher than a Fermi energy level of electrons traveling in the direction of the first crystal axis in the magnetic layer, is not present in a band of electrons

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located at an energy level higher than the Fermi energy level of electrons traveling in the direction of the second crystal axis in the non-magnetic layer (col. 2, lines 53+).

Regarding claim 7, Hannah et al. disclose the magnetic memory according to claims 1, wherein the spin polarization unit is a magnetic layer in which magnetization is fixed in substantially one direction (col. 3, lines 1+).

Claims 9-13 contain the similar limitation as previously discussed in claims 1-7. Therefore, they are analyzed as previously discussed with respect to claims 1-7.

Regarding claim 8, Hannah et al. disclose a method of writing data into a magnetic memory comprising: spin-polarizing electrons constituting a write current; converting the electrons into hot electrons; and reversing magnetization of a magnetic layer by the hot electrons (col. 4, lines 335+; col. 12, lines 1+).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gene N. Auduong whose telephone number is (571) 272-1773.

The examiner can normally be reached on 9-5-4, alternate second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai Ho can be reached on (571) 272-1777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GA
June 06, 2005



Gene N Auduong
Primary Examiner
Art Unit 2827